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EXAMINER

BISSETT, MELANIE D

| ART UNIT | PAPER NUMBER |
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1711

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DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/682,749

Applicant(s)

TADROS ET AL.

Examiner

Melanie D. Bissett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-3 and 5-6 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 2 recites "said cycloaliphatic polyester", where claim 1 describes a cycloaliphatic polyester in both the upper layer and the intermediate layer. It is unclear whether the applicant intends to limit the structure of the polymer in the upper layer, the intermediate layer, or both.
4. Claim 5 recites "where the alkyl has up to about 20 carbon atoms", where hydroxyalkyl, aminoalkyl, and substituted alkyl groups have all been mentioned. It is unclear which alkyl groups are limited to have up to about 20 carbon atoms. Claim 5 also recites "and containing an oxygen, sulphur or nitrogen atom" after listing a number of functional groups available as R⁸-R¹¹. It is unclear whether the applicant intends to limit each of the functional groups to contain an O, S, or N atom, whether the applicant intends the O, S, or N atom presence to be optional, or whether the applicant intends only the last mentioned functional group (aromatic heterocyclic group) to contain an O, S, or N atom.
5. Claim 5 recites the limitation "R¹³". There is insufficient antecedent basis for this limitation in the claim.

Claim Objections

6. Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 6 recites three formulas for the amine light stabilizer. First, all three structures show repeat units that are not present in the formula of claim 5. Since the formula of claim 5 does not encompass structures with repeat units, the materials limited in claim 6 do not further limit the stabilizer of claim 5. Furthermore, the second and third formulas in claim 6 do not correspond to the formula in claim 5, since the oxygen atom at the X position is not present in the structures. It is suggested that claim 6 could be rewritten to depend from claim 1 or rewritten in independent form to overcome the present claim objections.

7. Claims 13 and 22 are objected to because of the following informalities: Claim 13 is confusing, reciting "a change in gloss of less than about 20% 3000 hours of weathering". It is suggested that the phrase be rewritten "less than about 20% **after** 3000 hours of weathering". Also, claim 22 is repetitive by reciting "comprising blow molding a composition comprising blow molding the composition of claim 1." Appropriate correction is required.

Summary of the Claims

8. Claim 1 is drawn to a multi-layer composition comprising an upper layer comprising a polymer system consisting essentially of a cycloaliphatic polyester, a hindered amine light stabilizer, and a low volatility, hydroxyphenyl-triazine or low volatility, hydroxyphenyl-pyrimidine UV absorber; an intermediate layer comprising a polymer system consisting essentially of a cycloaliphatic polyester and optional additives; and a polymeric substrate. The intermediate layer is in intimate contact with both the upper layer and substrate. Although the polymer systems have been written to “consist essentially of” certain components, it is noted that the upper and intermediate layers are open to additional components. Thus, it is the examiner’s position that the “comprising” language of the layer compositions encompasses additional components combined with the polymer system components. Claim 19 is similar to claim 1; however, claim 19 limits the intermediate layer to contain TiO_2 in the polymer system and limits the substrate layer to a polycarbonate material.

9. Claims 2-3 limit the structure of the polyester, claims 4-6 limit the structure of the light stabilizer, claims 7 and 10 limit the weight ratios of the components, claims 8-9 limit the structure of the UV absorber, claims 11-12 limit the substrate, and claims 13-18 limit the gloss and color of the composition of claim 1. Claim 20 is drawn to an article comprising the composition of claim 1, claim 21 is drawn to an article comprising the composition of claim 12, and claim 22 is drawn to a method for forming a multi-layer article by blow molding the composition of claim 1.

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10. Claim 2 recites a broad term "cycloaliphatic radical" and then a narrow term "preferably having from 2 to about 12 carbon atoms." It is the examiner's position to treat the radical as not limited to have 2-12 carbon atoms.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacGregor et al. in view of Susi. MacGregor et al. (US 6,136,441-A) can be found on the applicant's Form PTO-1449.

13. MacGregor discloses multi-layer plastic composites comprising a substrate, including polycarbonate, and at least one layer of cycloaliphatic polyester, where decorative layers can be located between the substrate and surface layer (abstract). The reference indicates that the cycloaliphatic polyester resin itself may be colored or modified to be the decorative layer (col. 1 lines 39-46). Polyester resins include those which match the applicant's claimed formula (col. 4 lines 27-45), where a polyester having cyclohexane structures as part of the R groups is preferred (col. 4 lines 46-59). MacGregor teaches the use of triazine UV absorbers and hindered amine light stabilizers (HALS), indicating a useful amount of UV absorber as 0.05-10% by weight (col. 6 lines 20-67). The substrate film and surface layers may be coextruded, or blow

molded (col. 10 lines 40-58). However, MacGregor does not specifically teach a low-volatility, hydroxyphenyl-triazine UV absorber or teach the applicant's specified UV absorber and HALS structures.

14. Susi discloses a method of stabilizing polymer film coatings or molded articles against light by incorporating a mixture of a tris-aryl-s-triazine UV absorber and HALS compound into a polymer binder (abstract). The UV absorber has at least one hydroxyphenyl group. Polyester is noted as a binder polymer (col. 4 lines 48-57). Susi teaches the use of oligomer substituted piperidine HALS (col. 8 line 49-col. 9 line 35), HALS compounds fitting the applicant's claimed formula of claim 5 (col. 5 lines 20-51), and HALS compounds fitting the applicant's formula of claim 6 (col. 9 line 65-col. 11 line 24) in an amount of 0.01-5% by weight based on binder solids. The mixture of UV absorber and HALS compound provides improved gloss retention and weatherability compared to the use of individual additives (examples). Since MacGregor expressed interest in gloss retention and weatherability properties, it is the examiner's position that it would have been *prima facie* obvious to use an additive mixture by Susi's invention in the invention of MacGregor to further improve gloss retention and weatherability properties.

15. Regarding claim 19 limiting the intermediate layer to contain an additive, it is noted that MacGregor does not specifically teach incorporating an additive into an intermediate layer. However, the reference does teach colored and modified intermediate layers (col. 1 lines 38-46; col. 10 lines 40-54) and also suggests the use of additives in the substrate resin for coloration purposes (col. 10 lines 35-39). It is well

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known in the art to use dyes or pigments, including TiO_2 , to color polymeric binders and form decorative layers. Therefore, it is the examiner's position that it would have been prima facie obvious to include dyes or pigments in the intermediate layer of MacGregor to provide a desired color or appearance in the decorative layer.

16. Regarding claim 9, Susi teaches a general tris-aryl-s-triazine formula (I), where certain species are preferred. Note that preferred compound (XIVB) is similar to the applicant's claimed formula, where Susi's compound has methyl substituents on two of the phenyl groups instead of one phenyl group. Susi's general formula (I) indicates that the substituents may be hydrogen atoms. It is the examiner's position that, given the similarity of the structures, the use of the applicant's claimed UV absorber, which is encompassed by Susi's formula (I), would provide equivalent results to the preferred compound of formula (XIVB). Therefore, it is the examiner's position that it would have been prima facie obvious to use a compound fitting the applicant's formula in Susi's invention in the expectancy of providing equally improved gloss retention and weatherability properties.

17. Regarding the claimed gloss, change in gloss, and change in color properties, MacGregor teaches PCCD laminates having a gloss of 99.7 after irradiation, with a change in gloss of about 8%. However, the testing conditions may differ from those of the applicant's claimed properties. Also, MacGregor does not teach change in color in the applicant's claimed range. It is the examiner's position that the combination of MacGregor's laminate using Susi's UV stabilizer mixture would encompass the applicant's claimed specific UV additives and laminate structure. Susi teaches the


combination of specific UV absorbers and HALS as especially beneficial for improving gloss and weathering properties. Since similar articles would have similar properties, it is the examiner's position that the combination of MacGregor's laminate using Susi's UV stabilizer mixture would possess the applicant's claimed gloss and weathering properties.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (703) 308-6539. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

mdb
January 27, 2003



James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700